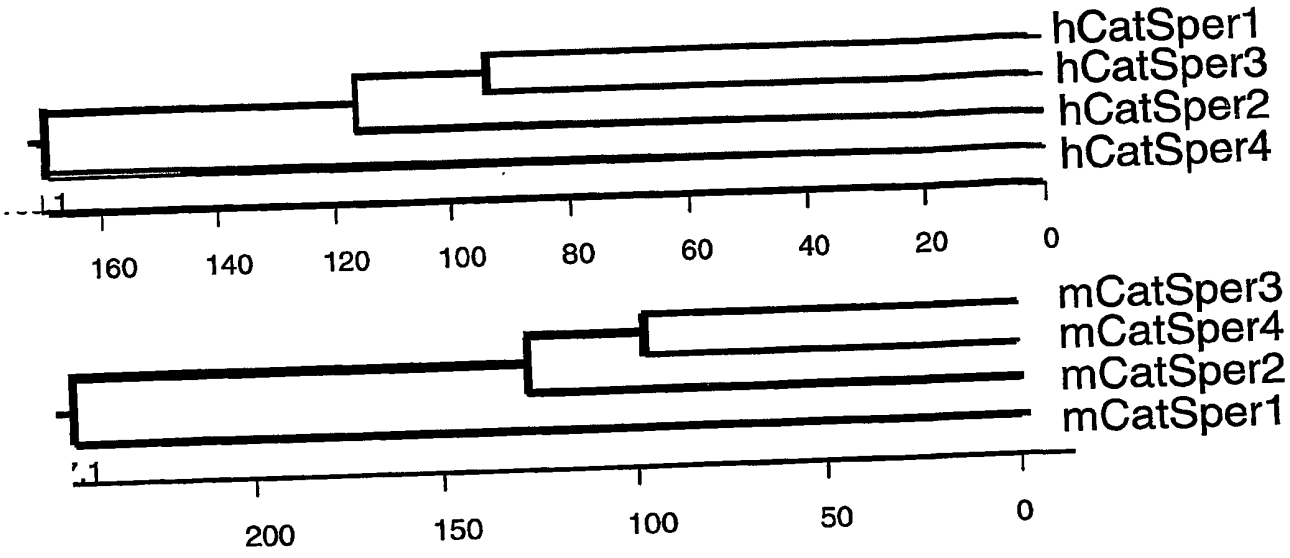
FIGURE 1

MSQHFHHNPV RVKSGSLFAT ASEALQARLS KIKRKDKECQ AYFRKVIKST	0050
FFQIVMITTV TTNSFLLVLG TNYDIQFEFF RTFEVSELFF VSVYVCEFLM	0100
KVYVDPITYW KDGYNILDVI ILIILTIPYL LRKIKGNHSA YLHFADGIQS	0150
LRILKLISYS RGIRTLIIAV GETVYTVASV LTLLFLLMFV FAILGFCLFG	0200
VTDRGDLENW GNLASAFFTL **FSLATVDGWT DL**QEELDKRK FTVSRAFTIL	0250
FILLASFIFL NMFVGVMIMH TEDSMKKFER DLTLERNLAI MEEKQIILKR	0300
QQEEVNRLMN TQKTGSMNFI DMVEGFKKTL RHTDPMVLDD FSTSLSFIDI	0350
YLVTLDNQDV IVSKLQELYC EIVNVLSLML EDMPKESSSS LSGLS	0395

FIGURE 2

MSQHRHQRHS RVISSSPVDT TSVGFCPTFK KFKRNDDECR AFVKRVIMSR	0050
FFKIIMISTV TSNAFFMALW TSYDIRYRLF RLLEFSEIFF VSICTSELSM	0100
KVYVDPINYW KNGYNLLDVI IIIVMFLPYA LRQLMGKQFT YLYIADGMQS	0150
LRILKLIGYS QGIRTLITAV GQTVYTVASV LLLLFLLMYI FAILGFCLFG	0200
SPDNGDHDNW GNLAAAFFTL **FSLATVDGWT DL**QKQLDNRE FALSRAFTII	0250
FILLASFIFL NMFVGVMIMH TEDSIRKFER ELMLEQQEML MGEKQVILQR	0300
QQEEISRLMH IQKNADCTSF SELVENFKKT LSHTDPMVLD DFGTSLPFID	0350
IYFSTLDYQD TTVHKLQELY YEIVHVLSLM LEDLPQEKPQ SLEKVDEK	0398

FIGURE 3



hCatSper3 and hCatSper1 are 21% identical
hCatSper3 and hCatSper2 are 22% identical
hCatSper4 and hCatSper1 are 17% identical
hCatSper4 and hCatSper2 are 21% identical

mCatSper3 and mCatSper1 are 20% identical
mCatSper3 and mCatSper2 are 22% identical
mCatSper4 and mCarSper1 are 22% identical
mCatSper4 and mCatSper2 are 22% identical

hCatSper1 and mCatSper1 are 48% identical
hCatSper2 and mCatSper2 are 71% identical
hCatSper3 and mCatSper3 are 68% identical
hCatSper4 and mCatSper4 are 65% identical

SEQ ID NO: 1 (Human CatSper4 cDNA)

ATGTCTCAAC ACCGTCACCA GCGCCACTCG AGAGTCATTT CTAGTTCACC 0050
AGTTGACACT ACATCGGTGG GATTTTGCCC AACATTCAAG AAATTTAAGA 0100
GGAACGATGA TGAATGTCGG GCATTTGTGA AGAGAGTCAT AATGAGCCGT 0150
TTCTTTAAGA TAATTATGAT TAGCACTGTC ACATCGAATG CGTTTTTTAT 0200
GGCCTTGTGG ACCAGTTATG ACATAAGGTA CCGCTTGTTC AGACTTCTTG 0250
AGTTCTCGGA GATCTTCTTT GTGTCCATCT GCACATCTGA GTTGTCCATG 0300
AAGGTCTATG TGGACCCCAT CAACTACTGG AAGAACGGCT ACAACCTGCT 0350
GGATGTGATC ATTATCATCG TTATGTTTTT ACCCTATGCC CTCCGCCAGC 0400
TCATGGGCAA ACAGTTCACT TACCTGTATA TCGCTGATGG CATGCAGTCC 0450
CTGCGCATCC TCAAGCTTAT CGGCTATAGC CAGGGCATCC GGACGCTGAT 0500
CACCGCCGTG GGGCAGACAG TCTACACCGT GGCCTCTGTG CTCCTCCTGC 0550
TCTTCCTCCT CATGTACATC TTCGCTATCT TGGGCTTCTG CCTGTTTGGA 0600
TCTCCAGACA ATGGTGACCA TGATAACTGG GGGAACCTGG CTGCAGCTTT 0650
TTTCACCCTC TTCAGCTTGG CCACGGTTGA TGGCTGGACA GACCTGCAGA 0700
AGCAGTTGGA CAATCGGGAA TTTGCTTTGA GCCGGGCATT CACCATCATC 0750
TTCATCTTGC TCGCCTCTTT CATCTTCCTC AACATGTTCG TGGGTGTGAT 0800
GATCATGCAC ACAGAGGACT CCATCAGAAA GTTTGAGCGA GAGCTGATGT 0850
TGGAGCAGCA GGAGATGCTC ATGGGAGAGA AGCAGGTGAT TCTGCAGCGG 0900
CAGCAGGAGG AGATCAGCAG GCTGATGCAC ATACAGAAAA ATGCTGACTG 0950
CACAAGTTTC AGTGAGCTGG TGGAGAACTT TAAGAAGACC TTGAGCCACA 1000
CTGACCCAAT GGTCTTGGAT GATTTTGGCA CTAGCTTACC CTTCATCGAT 1050
ATCTACTTTT CCACTCTGGA CTACCAGGAC ACAACTGTCC ACAAGCTTCA 1100
AGAGCTGTAC TATGAGATCG TGCATGTGCT GAGCCTAATG CTGGAAGACT 1150
TGCCCCAGGA GAAGCCCCAG TCCTTGGAAA AGGTGGATGA GAAGTAG 1197

SEQ ID NO: 2 (Human CatSper4 Protein Sequence)

MSQHRHQRHS RVISSSPVDT TSVGFCPTFK KFKRNDDECR AFVKRVIMSR 0050
FFKIIMISTV TSNAFFMALW TSYDIRYRLF RLLEFSEIFF VSICTSELSM 0100
KVYVDPINYW KNGYNLLDVI IIIVMFLPYA LRQLMGKQFT YLYIADGMQS 0150
LRILKLIGYS QGIRTLITAV GQTVYTVASV LLLLFLLMYI FAILGFCLFG 0200
SPDNGDHDNW GNLAAAFFTL FSLATVDGWT DLQKQLDNRE FALSRAFTII 0250
FILLASFIFL NMFVGVMIMH TEDSIRKFER ELMLEQQEML MGEKQVILQR 0300
QQEEISRLMH IQKNADCTSF SELVENFKKT LSHTDPMVLD DFGTSLPFID 0350
IYFSTLDYQD TTVHKLQELY YEIVHVLSLM LEDLPQEKPQ SLEKVDEK 0398

SEQ ID NO: 3 (Murine CatSper 4 cDNA)

ATGTCCCAAC ATTTTCACCA CAACCCTGTA CGAGTCAAGT CGGGCTCACT 0050
GTTTGCTACA GCATCGGAAG CATTGCAGGC AAGACTGAGC AAGATTAAGA 0100
GGAAGGATAA GGAGTGCCAG GCTTACTTCA GGAAGGTTAT TAAGAGCACT 0150
TTCTTCCAGA TTGTGATGAT CACCACGGTC ACCACCAACT CCTTTTTACT 0200
GGTCTTGGGG ACTAATTATG ACATACAATT CGAGTTTTTC AGAACCTTTG 0250
AGGTCTCAGA GCTTTTCTTT GTATCTGTCT ATGTCTGCGA GTTCCTCATG 0300
AAGGTCTATG TGGACCCCAT TACATACTGG AAGGATGGCT ATAACATACT 0350
GGATGTGATC ATTCTCATCA TTCTCACCAT ACCCTATCTC CTCCGCAAAA 0400
TCAAGGGGAA TCATTCTGCA TACCTCCACT TTGCTGATGG CATCCAGTCT 0450
CTACGAATCC TCAAGCTTAT CTCCTACAGT AGGGGCATCA GGACACTCAT 0500
CATCGCTGTG GGGGAGACGG TCTACACTGT GGCCTCGGTG CTGACGCTGC 0550
TCTTCCTCCT CATGTTTGTG TTCGCGATCC TGGGATTCTG CCTATTTGGC 0600
GTGACGGACA GAGGCGACCT GGAGAACTGG GGGAACCTGG CTTCAGCTTT 0650
CTTTACTCTC TTCAGTTTGG CCACGGTTGA TGGCTGGACT GACCTGCAGG 0700
AAGAGCTGGA CAAGAGGAAG TTTACTGTGA GCCGGGCGTT TACTATCCTC 0750
TTCATCTTGC TTGCATCCTT CATCTTCCTC AACATGTTTG TGGGTGTGAT 0800
GATCATGCAC ACGGAGGATT CCATGAAAAA GTTTGAGCGG GATCTGACGT 0850
TGGAGAGGAA CCTTGCGATT ATGGAGGAGA AGCAAATAAT CCTGAAACGC 0900
CAGCAAGAGG AGGTCAACAG GCTGATGAAC ACACAGAAAA CTGGTAGCAT 0950
GAACTTCATT GATATGGTGG AGGGCTTCAA GAAGACCCTG CGGCACACAG 1000
ACCCCATGGT TCTGGATGAC TTCAGCACTA GTCTCTCCTT CATTGATATC 1050
TACTTGGTCA CACTGGACAA CCAAGATGTT ATTGTCAGCA AGCTTCAGGA 1100

GCTCTACTGT GAGATTGTGA ACGTGCTGAG CCTGATGTTG GAAGACATGC 1150
CCAAGGAGAG CTCGTCCAGC CTCTCGGGAC TAAGTTAA 1188

SEQ ID NO: 4 (Murine CatSper4 Protein Sequence)

MSQHFHHNPV RVKSGSLFAT ASEALQARLS KIKRKDKECQ AYFRKVIKST 0050
FFQIVMITTV TTNSFLLVLG TNYDIQFEFF RTFEVSELFF VSVYVCEFLM 0100
KVYVDPITYW KDGYNILDVI ILIILTIPYL LRKIKGNHSA YLHFADGIQS 0150
LRILKLISYS RGIRTLIIAV GETVYTVASV LTLLFLLMFV FAILGFCLFG 0200
VTDRGDLENW GNLASAFFTL FSLATVDGWT DLQEELDKRK FTVSRAFTIL 0250
FILLASFIFL NMFVGVMIMH TEDSMKKFER DLTLERNLAI MEEKQIILKR 0300
QQEEVNRLMN TQKTGSMNFI DMVEGFKKTL RHTDPMVLDD FSTSLSFIDI 0350
YLVTLDNQDV IVSKLQELYC EIVNVLSLML EDMPKESSSS LSGLS 0395

SEQ ID NO: 5 (hCatSper4 5' flanking sequence containing basal promoter region)

ACAGGCATGA GCCACCGCGC TTGGCCAGAA GTGGCATTCT TAAATTCAAG 0050
AAATTGGGAT GGGGAGTATT CACACATTTT ATAACCCAGA AATTCAAGCA 0100
ATTCTGGTGA CTACAAATGC ATTGTTTTGG AGAATAGTTG TAAGGTGGAA 0150
AAAGAATTAG GAACTCGACA GATAGTGAGT TTTAACTTTA AATAACAATT 0200
CTTCTTTTGT TTTGTTTTGT TTGAGACGGG GTCTCGCTCT GCTGCCCAGG 0250
CTGGAGTGCA GTGGCAGGAT CACGGTTTAT TGCAGCCTTA ACCTCCTGGG 0300
CTCAAGCAGT TCTCCCTCCT CAGCCTCCAG AGTAGCTGGG ACTATAGGCA 0350
AGTGCCACCA CGCCTGACTA ATTTTTAAAT TTTTTGTAGA GATGGGGTCT 0400
CCCATCTTGC CCAGGCTGGC CTTGAACTCT TGGGCTCAAG CAAGCCTCCC 0450
ACCTCTGCCT CCCAAAGTCC AAGGATTACA GGTGTGAGCC ATTGCCCCCA 0500
GCCAGTATAA CAGTTTGTGT GTGTGTGTGT GTGTGTGTGT GTGTGTGTGT 0550
GTTTGACACG GGGTCTCATT CTGTTGCCCA GGCAGTAGTG TAGTGGTGCG 0600
ACCATGGCTC ACTGTAGTCT TGACTTCTCA GGCTCAAGTG ATCCTCTCAC 0650
CTCAGCCTCC TGAGTAGCAG CGGTTACAGG CATGCATCAC CACACCTGGC 0700
TTATTTTTAA AACTTTTTTG TGGAGACAGG GTCTTACTAT GTTGCCATGG 0750
CTGGTCTAGA ACTTCTGGGC TCGAGTAATC CTCCTGCCTT GGCCTCTCAA 0800
AATGTTGGGA TTACAGGTGT GAGCCACTGT GTCATAACAA TTATTTTAAA 0850
ATTTTTATTT ATTTATTTTT AATAATTATA CAAGATGGAG TCTCACTATG 0900
TTGCCCAGGC TGGTCTTGAA TGCCTGGGCT CAAATGATCT TCCTGCCTTG 0950
ACCCCCCAAA GTGCTGGGAT TACAGGCGTG AGCCACTGCG CCTGGCCTAT 1000
AACAATTCTT ATGAAGCTAA AGTTGATTTG GATTTTAGCT GCCGTTACTA 1050
CTTATATAAT TAATTAGATT AAACAAGTCA CAAAAATTGG ATGAGCTATC 1100
TTGGTGTGTT TTCTTTACTT TTCTCTTTCA ACAGAGAGTT GAAGGAGAGG 1150
ACAAGTGTCT TGTCTGTGGC TTCCAGGAAT GTGTGGCAAT ATAAGATTTA 1200
CTGTTACAGC AGCCAACTCA CCAAGTCATT ATTTGACTTA CTGAGTTAAG 1250
GAGGAACTAA GGGTCATTTT CCCCCCATCA TTTGCATGTT TTGACTCCTG 1300
AACTGAGGGT CTACGGCCAC TGAAGCTAGA AGCTAGAAGG GTGTTAATCA 1350
GTAGTGAGCT CTACTTACTC CATGTGTCAC TGACAGATGT AAAAAGGAAT 1400
ATCAAGTAAT CTATTATTTA AAAATTGTAA TAAGAGTGTT TTTTGAAGGA 1450
ATTCAGGAAT GTACTACTAA CGAGATTATG ATGCAGGTAT ATCCATCCAT 1500
GAAGCATTTG TTAGTCCCTT GAAGCATCAT GGTAGTGGAA TTTAACATGG 1550
ATCATCTTTG TAAACCCACC TCTCTTTAGG GGCCAGAGAA ATCACTGTTT 1600
GTTACAACAA GCAAACCTTT CCCTCTCCAT GTCACCCTTG CCCCAAACCT 1650
GAGAAACATA TGGGAACATG GCACAGAGGC TGAGCTCTCT GAAGCCAGTT 1700
CCTGGCTGGT TTTGCTGGCC AGGGAGAGGC AGGTGTGGTC AGTTGCCCTG 1750
TGGACATGTG GTGTGCAGGG AGAGAAGAGG GAAAAGAGCC ACTCAGGCTC 1800
TCTGGCTGCC AGGGGATCCA GACTCTTAGC ACTAGAACTT CTGTTTCTTA 1850
GAATTCTTCC CAAGGAAAAG ACAAAACTGT GTTTTTATAA GCTGGTTTCC 1900
TATAGTGTAG ATTTGGGACT TTTATACATT TTATTACCAA ATATTTTTAG 1950
TTAAGTGCTT CAATTTTCAA CATTAATTCT TTAAAATTTT CTTTTGAGAA 2000
TCATCACCTG GATTTACATG AATTTTTTAA GCATGAAAAA ATTTAAACAT 2050
ATTCAAAAGT ACATGAATAG TACATTGAAG CCTTATATAC ATATCACCCA 2100
GATATAAAAA TTACCAAGAT TTTGTCCCAG TTGCTTCATT TTCCCTGTTT 2150
CCTTCTTTGC TAAAGTATTT AAAAGCAAAT CCCAGATAGC TTATCATTTC 2200
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TTTCTGATTC AGCATTCAGA AACATTCTAG GTGGACTCTG TAGCTTTCAG 3700
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AACAGCATTC ATCTGTGGCT GTGCTGATGT AGTACACCAA GAACAACTGG 4150
GCTCTTCTCT GTCACTTTCA GTGGGCTACC TTCCCTCACC TCTCCAAGCA 4200
GCATGAAAGA ATTCTTTACA TTTTTAATCT CTTTTTTGTT TTTCCCTGAA 4250
AGTATGCTTT GGTGCTTAAA GAGAGAAGTC ACAAAAGTAT ACTACTGAGT 4300
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GAGTGCAGTG GTGTGATCAC AGCTCATTGT AACCTCCAAC GCCTGGACTA 5250
AAGTGATCCT CCTACCTTGG CCTCTCTGGT AGCTGGGACT ACAGGTGCAT 5300
GCCACCACAC CCACCTAATT TTTTTTATTT TTATTTTTTG TAGAGACAGT 5350
CTCACTATCT TGCTCAGGCT AGTCCTGAAC TCCTGGGCTC AAGTTATCTT 5400

GCTGCCTCAG CCTCCCATGG GTAATTTTTA TTTCCTTTTT TTTTTTTTTT 5450
GGAGATGGAG TTTCGCTCTT GTCGCCCAGG CTGGAGTGCA ATGGCACGAT 5500
CTTGGCTCAC TGCAGTCTCC ACCTCCTGGG TTCAAGTGAT TCTCCATCCT 5550
CAGCCTCCTG AGTAGCTGAG ATTACAGGCA ACTGCCACCA TGCGCGGCTA 5600
ATTTATGTAT TTTTTTTTAG TAAGAGATGG GGTTTCACCA TGTTGGCCAG 5650
ACTAGTCTTA AACTCCTGAC CTCAAGCGAC CTGCCTGCCT TGGCCTCCCA 5700
AAGTGCTGGG ATTACAGGCA TGAGCCGCTA TGCCTCGTCG CTGATTTTTA 5750
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ATCTCAAACT CCTGGCCTCA AGTGATCCTC CCACCTTAGC CTCCCAAGTT 5850
GCTGGGATTA TAAGTGTGAG CCACTATCCC TACCTCACTA TTACCTTCTT 5900
TGCTTCTCTT GTTTTCTTTT GTTCTAAGTC AAACCCATCA CAATCTTTTC 5950
TTGTCCTTCC AGGTGTTTTC CAGTGCTGTG CCCTGGATGT GCTCTCTTTC 6000
TCTTAGAGCC CAGAGAACTT GCTTTTCCCC CTTATATATG ACCCTTAACT 6050
TTTTCTAACA CATTATTAAG GGCCTGTGTC TATCAGCTGG GGGCACTTCT 6100
TGAAGGGAGG GCCTTTGTGT GGTCTGTTTC TAGTGACTTC CAGCTTTAAC 6150
CCAGAGCCTC ATGATTGCTG GGTGCCCATA GCCTTTTTGC TGAATGGAGG 6200
CACTCAGTCT CCTTGGGAAG AGAGAATCCA TGATAGACCC ACTTGGGAGC 6250
TCCCCACTTC AGGGGCCTAC ACACTGGTAA TGCAACAGAA TGCCCAAGAG 6300
TGACCTCATA AAGCAAGGAT TCCCTTCGTG GCCCCTTCTC TGCTGCCTCT 6350
CAGAATCC 6358

SEQ ID NO: 6 (hCatSper4 5' UTR Sequence) 0050
AGACGCTAAG GAAAATCCCT AAGCAGAGAT TTTCTGTTGG ATGCTAAAAG 0078
CAAGGAATAA AAGTTGAAAA TTTGGAAA

SEQ ID NO: 7 (hCatSper4 3' UTR Sequence) 0050
CTGGGCATGG GGCACCCATG TGCCGAGAGC CTTGCAGACC ATGACAGGTC 0072
CCTATTAAAC ACAGGCTTTC TG